

# USAFA Educator



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Capt Jason Bartolomei, DFCE, explains a fast-paced way to replace tedious homework assignments through a tournament game.

**[Multimedia Learning in the Internet Age by Captain Joy M. Kaczor, formerly DFMS, is available on line at**

[http://www.usafa.af.mil/dfe/education/f03/multimedia\\_learning.htm](http://www.usafa.af.mil/dfe/education/f03/multimedia_learning.htm)

Space did not permit its inclusion in the paper issue.]

## Using the Case Study Method: Wrestling with Actual Air Force Issues in the Classroom

Maj Dan Higgins, DFL

In June 2002, six other Academy instructors and I attended a case teaching workshop sponsored by The Daniel J. Evans School of Public Affairs at the University of Washington. Next fall (2003), several of those who attended will present a workshop on using the case study method. Until then, here is some food for summer thought and a primer for that workshop.

**WHAT IS A CASE?** If you are unfamiliar with the case study method, after perceiving that I am a lawyer, you might immediately think, "Oh, this article is about plaintiffs, defendants, and juries and has no relevance to my classroom." But that is not the kind of case I am talking about. Instead, a case, or more accurately, a teaching case, is simply a way to formalize what you are probably already doing—bringing the real world, and especially actual Air Force issues, into the classroom.

Teaching cases are largely based upon real events worthy of more detailed analysis. Typically, a case will involve an issue or controversy that students are asked to resolve. The "facts," presented from a variety of viewpoints, allow the student to see the problem from any number of different perspectives. There is no "school solution" in a teaching case. Instead of focusing on reaching a right answer, the students exercise their analytical and critical thinking skills, and the "right answer" is secondary to the exercise itself.

When using teaching cases, the instructor must consciously step out of the spotlight. You will often need to give up your traditional role to become a facilitator who simply tosses out key facts from the case or seeks to ensure that a minority viewpoint is heard. It is the difference between telling students "this is important because . . ." and saying "what about this fact?" and allowing them to decide for themselves whether the fact is important.

**WHY USE CASES?** Teaching cases provide for a more dynamic and interactive classroom than the normal lecture method. Instead of your absorbing the material and then passing it on to your students in a typical lecture, the case method forces interaction between you and the student, the student and the material, and among the students themselves. Cases are the best way I have found to achieve "intellectual critical mass" where students are questioning and responding to questions posed not by you, but by each other.

**HOW I USE THE CASE STUDY METHOD:** Two factors limited the effectiveness of my case teaching sessions at USAFA. The first of these is the 50-minute class period. Fifty minutes is just not enough time to work through a case effectively, even a short one designed for a single class period. Students need to stumble around a bit to truly achieve critical thinking skills. Case teaching instructors have to sit quietly while cadets decide for themselves that their proposed solution will not work because they have missed a crucial fact. A 50-minute period reinforces a natural tendency to jump in when you first see cadets start down the wrong path, but this intervention subverts the learning process. In short, you must have patience. For me, this meant that I had to add an extra day to each case study we did.

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## Traits of Outstanding Teachers: a Baker's Dozen

Dr. Kenneth J. Zahorski, St. Norbert's College

*Better than a thousand days of diligent study is one day with a great teacher.*

—Japanese Proverb—

**[Editor's Note:** The *USFA Educator* typically highlights our own talented educators, but occasionally an inspirational piece from another venue deserves circulation. When I first read it, I was immediately struck by the relevance of Ken Zahorski's "Traits of Outstanding Teachers" because they are the traits—or qualities—I recognize and revere in my USFA colleagues. Dr. Zahorski captured in the summary below almost twenty years of collective wisdom from New Faculty Orientation Panel sessions on "Teaching-Learning at St. Norbert College."]

**PREPARATION:** Not surprisingly, one of the traits panelists most frequently mentioned was preparedness. Just as a house cannot be built without a foundation, so, too, is it impossible to build an admirable teaching career without adequate preparation as both scholar and teacher. There can be no fudging here; the matter is non-negotiable. Teachers owe themselves, their profession, and, most especially, their students the highest level of competency in both their disciplinary subject matter and in their pedagogy. The bar must be set high. Minimal standards are not good enough. Nor can one blithely assume that the standards of competency met at the beginning of one's career suffice to career's end. Fields change, as do students, their preparation, and expectations. Teaching tools and methodologies also change, sometimes profoundly, as evidenced by the advent of instructional technology and distance learning. Outstanding instructors strive mightily to keep abreast of these changes. Preparedness, in short, is neither a fixed mark, nor a product, but rather an ongoing process. The strongest brand of commitment is needed to maintain the integrity of this process.

**CLARITY AND ORGANIZATION:** But what good is having the requisite knowledge of one's discipline, even regularly updated knowledge, if we cannot convey it to our students in a clear, concise, and well-organized fashion? Herein lies one of the greatest challenges faced by all instructors—the challenge of helping students understand sophisticated and complex concepts. Outstanding teachers manage to do what gifted writers such as Isaac Asimov, Carl Sagan, Lewis Thomas, and Stephen Jay Gould have done so remarkably well over the decades: make nearly

impenetrable concepts and ideas transparent and understandable. Noted educator, Jaime Escalante, of *Stand and Deliver* fame, accomplished the same end (spectacularly, in fact) with his underachieving Latino students through the adroit and creative use of metaphor. Clarity is demanded at all levels of the teaching-learning enterprise. While it is essential that we be clear about the grand, overarching goals and objectives of our courses, we must be just as clear and precise in stating our daily classroom objectives: clear board outlines, our daily "road maps," for example, can be of vital importance to the learning process. If we are to expect our students to communicate clearly, to think critically and orderly, we must model these skills.

### **ADAPTABILITY AND FLEXIBILITY:**

Calcification, the dreaded "C" word, poses a potential threat to all instructors. A particularly insidious malady because of its stealth, calcification has a knack for creeping up on us. Little by little, year after year, established routine asserts itself. Like the incremental layering that produces sedimentary stone, the activities, methods, approaches, and exercises we use on a daily basis gradually, usually imperceptibly, become our set-in-stone repertoire—rigid, unchanging, inviolate. The antidote? Unfortunately, there is no magic bullet. Attitude is key. We must maintain an openness to change and innovation, along with a childlike willingness to experiment and try new things. We must approach our teaching with a spirit of adventure, even when that approach pushes the envelope in terms of our comfort level. In short, we must become risk takers, because only through risk taking can we significantly improve our pedagogy.

**GENEROSITY:** Teachers often joke that if money had been their goal they wouldn't have gone into teaching. But beneath this veneer of whimsicality resides a serious subtext: good teaching requires a service mentality. Outstanding teachers practice selflessness, regularly putting their students first, and habitually giving of themselves—of their time, their skills, their energy, their expertise, their emotions. Such generosity does not go unnoticed by our students. In fact, students are exquisitely sensitive to, and appreciative of, a teacher's generosity, placing a very high premium on accessibility and availability. Indeed, the spark that ignites into an enduring flame of lifelong learning in our students is often struck through office visits and other such out-of-

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*Traits, cont'd from page 2*

classroom interactive activities. Deep, transformative learning is, and always will be, most strongly nurtured through personal attention and interaction.

**INTEGRITY:** One of my first mentors, the late Ken Eble, in his classic work on pedagogy, *Professors as Teachers*, describes teaching as a "moral act," citing the ethical importance of even such everyday practices as providing proper attribution to the varied sources making up each of our classroom lectures. Eble goes on to remind us of other ways in which integrity and morality manifest themselves in our professional lives: "Admitting error, resisting temptation, responding to conscience, having a conscience, being concerned with right and wrong—these concerns are essential to the teacher's morality" (p. 52). We also manifest our integrity through scrupulously honoring the covenant we make with our students through our stated course objectives, as well as through maintaining strict confidentiality in handling personal and academic information we might possess about our students. Not doing one's very best to make it possible for students to meet course objectives is another inherently dishonest act, as is entering a classroom without the requisite preparation. Perhaps the most egregious act of dishonesty, however, is going into, or remaining in, the teaching profession without the requisite total dedication.

**RIGOR:** One of the finest compliments an instructor can receive on a student evaluation feedback form is that he or she is "tough but fair." The description is rich with nuance and positive implication. Students deeply respect and appreciate instructors who assiduously try to help them reach their full potential; who try to expand student's imaginative, creative, and critical thinking horizons. Students also appreciate being placed at the heart of the learning experience (rigor in its finest form, I submit), instinctually sensing that hands-on experiences result in deeper learning than mere notetaking. They would agree with Mark Twain's witty, but sage, observation that "the person who grabs the cat by the tail learns about 44% faster than the one just watching." A final point. While students do thrive in a rigorous learning environment, they are less likely to do so if they do not perceive that fairness informs that rigor. Students laboring under the challenges of a rigorous learning regimen need the (re)assurance that they will be treated and evaluated fairly. In brief, rigor must be framed and nurtured in an environment of trust, openness, and equity. Only in such an environment will students be likely to give their all in the pursuit of learning.

**GOOD LISTENING SKILLS:** The first word in the rule of St. Benedict is "Listen!" It is a good rule not only for contemplatives, but also for teachers. Listening sounds easy, but is not. It is a skill that must be cultivated and nurtured. In short, it does not happen automatically; we must train ourselves to become active, deep, and sympathetic listeners. Good listening manifests itself in many ways. Few classroom actions, though, provide more compelling evidence of good listening on the part of the instructor than early and regular feedback. Feedback is as important to the student as weather reports to a pilot. Outstanding instructors know this. They also know that good listening means not only providing students with information about their progress, but also means soliciting from students information about how well the instructor is doing as a teacher, and then acting upon that information. Much can be learned from our students if only we listen deeply and carefully. Finally, it is not only important to listen actively to our students, but to listen to ourselves, to engage in "inward listening," the first step in analytically assessing our own teaching.

**COLLABORATIVE SPIRIT:** Exemplary teachers view the teaching-learning enterprise as a partnership, as a genuine collaborative effort. They do not assume the autocratic role of "sage on the stage," but rather the more democratic one of "guide on the side." Circles, skilled teachers know, are far more learner friendly than rows of desks facing a podium. Partnerships demand shared experiences and reciprocity. One of the most powerful learning experiences a student can have is to witness his or her instructor grappling with similar learning challenges. Learning is difficult and often messy, a point well worth conveying to our students. Thus, an instructor's struggle to solve a problem through trial and error in a public fashion, at the chalk board, for example, is profoundly instructive, at times even epiphanic—for both student and instructor.

**SENSE OF HUMOR:** There is probably no single quality possessing more redemptive and therapeutic potential than a lively sense of humor. Humor can reenergize a dull and listless class session, help reveal the teacher's warmth and humanness, and defuse tense classroom situations in almost miraculous fashion. Humor, however, cannot be forced or artificial; it must be spontaneous and genuine. Nor can it be deprecatory, or patronizing, lest it become injurious, rather than healing. Humor reminds us not to take our authority, our expertise, our rank, and ourselves too seriously. It serves

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*Traits, cont'd from page 3*

as our praetorian guard, constantly reminding us as the guard did Caesar, that we are mere mortals after all. Students cherish the gift of humor in their instructors.

**AUTHENTICITY:** Holden Caulfield, the rebellious teenage protagonist of J.D. Salinger's *The Catcher in the Rye*, speaks for all students when he repeatedly blasts "phonies," especially academic phonies. Caulfield, like all students (like all human beings), has a deep yearning for authenticity, for genuineness. Students do not want a teaching persona as their learning facilitator, but rather an authentic human being, warts and all. Like one of Luigi Pirandello's dramatic characters, they long to see the face behind the mask. Outstanding teachers do not fear disclosure; they know that the way to truly connect with their students is by being true to themselves, by letting their personalities shine through, by revealing that they, too, are human. Perhaps most importantly, outstanding teachers readily admit that they make mistakes and that they don't always have the answers to questions. "To thine ownself be true," Polonius advises his son, Laertes. Good advice still.

**COMPASSION AND SENSITIVITY:** In his *The Art of Teaching*, Gilbert Highet wisely observes that "it is very difficult to teach anything without kindness" (pp. 63-64), a sentiment echoed in most of Parker Palmer's inspirational works. Exceptional teachers display a genuine care and concern for students. While compassion in the classroom demonstrates itself in many ways, one of the most potent manifestations is "perspectivism." Outstanding instructors try to see things through their students' eyes. True compassion, after all, begins with empathy and empathy in turn begins with understanding.

**REFLECTIVENESS:** Few of the best teaching practices mentioned above actually materialize without considerable analysis and reflection. We must, as Donald Schön stresses in his perceptive and thought-provoking writings, become "reflective practitioners." Retrospective analysis and thoughtful reflection about our teaching practices enable us to improve them. Only through such reflective exercises can we make wise decisions about which practices should be maintained, which modified, which discarded. There are many avenues leading to this destination, but one of the best is the teaching portfolio, an approach that demands from the practitioner periodic reflection, systematic analysis, and revelatory introspection.

**ENTHUSIASM:** I have saved for last the quality that appears first on nearly every listing of traits students believe to be most important in their teachers. When Ralph Waldo Emerson sagely noted "nothing great was ever accomplished without enthusiasm" he was making a generalization about all of life's activities, but he might just as well have been focusing on pedagogy. Nothing, absolutely nothing, substitutes for enthusiasm in the classroom. If W. B. Yeats is right when he states that "teaching is not filling a pool, it is lighting a fire," we must constantly seek teaching-learning approaches capable of igniting the flames of intellectual curiosity and learning. Few flames, alas, result from lifeless, monochromatically delivered lectures. Enthusiasm, as the old bromide rightly states, is contagious, and this is one contagion instructors should not be loathe to spread. As instructors we must energetically, and proudly, display the love of subject and learning that drew us to our disciplines and to the profession of teaching in the first place; we must model for students the robust life of the mind so strongly that at the very least their curiosity about our unbridled excitement and enthusiasm will tease them into more deeply exploring the subject being studied.

**CONCLUSION:** Here, then, is the promised baker's dozen of primary traits of exemplary teachers. Let me conclude with a few summative observations.

- ◆ First, note that outstanding teaching requires not only basic subject and teaching mastery, but essential qualities of the heart and spirit as well, a point Parker Palmer makes repeatedly in his *The Courage to Teach*.

- ◆ Second, outstanding teachers take a holistic approach to teaching-learning (another Palmer theme), seeing their students as whole, multifaceted human beings replete with feelings, problems, and plenty of emotional baggage.

- ◆ Third, outstanding teachers realize that when they stand before a group of learners they are modeling the life of the mind and spirit; they know they are teaching what they are. Quite simply, *being* what you are speaks more compellingly than what you say, no matter how eloquent you may be. Professor Morrie Schwartz, in Mitch Albom's inspirational *Tuesdays with Morrie*, has plenty to say, but it's how he courageously battles Lou Gehrig's disease that inspires his former student—and all the book's readers.

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## Creativity Thrives with USAFA Academic Games

James Downton defines creativity as “the capacity to think and behave in unconventional ways,” including the cultivation of a “more playful mind,” one welcoming chances to “develop new ideas and novel approaches to issues.” (p. 3). Phillip Wankat & Frank Oreovicz (2003) assert that “creative thinking needs to be part of every student’s education. Good teachers know that textbook knowledge only goes so far toward solving real-world problems. Students will need fresh ideas and original thinking to tackle challenges.” Further, they emphasize that teachers must take the responsibility for helping students develop those skills: “So if—as Albert Einstein said—imagination is more important than knowledge, why do we wait until the open-ended problems of the senior capstone design course to encourage creativity in our students?” Among other recommendations, they suggest: “Use creative thinking techniques and games.” (p. 1)

As an article in the spring 2002 issue of the *USAFA Educator* points out, games can significantly impact a number of learning variables, including higher order thinking, increased feedback, and active learning. They can also foster creativity by encouraging students to “think outside of the textbook” (Wankat & Oreovicz, 2003, p. 1). In this spring semester four creative games were shared with USAFA faculty during Brownbags. A summary, with contact information, follows for three of the games. The fourth, “Mech Madness,” is featured in a separate article. Please contact the game experts for complete sets of rules, examples, and advice for classroom adaptations.

**CLASSROOM FOOTBALL (CAPT DANE FULLER, DFEE):** The teacher assigns the material to be covered through a competitive (two opposing teams) football game, complete with a simulated playing field. Teams advance on the field when their members—determined by the roll of a six-sided die—answer questions correctly within a specified time limit. The game includes rules related to penalties, loss of down, passing the football (the question) to another player, touchdowns, and field goals. To maximize participation (24 total students), two students on each team can work together with the assigned numbers of 11,22,33,44,55,66. Fast-paced and energetic, students are motivated to study the assigned material because they want to help their team win (peer pressure and competition). Working in pairs usually enhances learning because peer coaching typically takes place. However, because the time limit is so short (20 seconds) and because the team gains yards based on the speed in which the question is correctly answered, in

reality, the stronger member of the pair is apt to be the respondent. However, the throw of the die (luck) determines the pair or individual to answer (a 6, for example, might mean that number 66 of the offensive team, answers). This element of luck is an important principle of academic gaming because if players could volunteer responses, then only the strongest players on each side would be involved, and there would be no incentive for other students to study. Further, as Chickering and Gamson’s (1987) *Seven Principles for Good Practice in Undergraduate Education* point out, all students benefit from being engaged: “Learning is not a spectator sport.” In Classroom Football, all students are actively involved until the end of the period when the winning team is determined by the highest score.

**CROSSWORD PUZZLES (CAPT TROY TWESME, DFCE):** Free software from EclipseCrossword.com allows faculty members to design and print their own class-related crossword puzzles. They need only to go to <http://www.greeneclipsesoftware.com/eclipsecrossword/index.html> and type in the words and the clues. The program compiles the puzzle automatically. It is easily uploaded to the web and printed. Crossword puzzles are an excellent way to build vocabulary within the discipline, but they can also be used to reinforce concepts. They can be used both in-class and for homework assignments.

Capt Tresome’s engineering classes enjoyed working a crossword puzzle with clues such as: Must be done on all measurement devices prior to use; Wind travels perpendicular to these; Causes biological mutations; The CAAA of 1970 created the \_\_\_\_\_ (6 letter acronym); Under the CAAA of 1990 \_\_\_\_\_ required the EPA to regulate 188 HAPs; \_\_\_\_\_ sensing is sometimes used to measure vehicle emissions; Maximum \_\_\_\_\_ Control Technology; This means no heat is exchanged with the surrounding environment; One of the devices we used in the lab to measure flowrate.

Crossword puzzles work in virtually any discipline. For example, after learning of this software, Capt Amy Carlton, DFL, created a crossword puzzle based on free speech. Her DFL colleague, Mr. Chad Austin developed a puzzle to use for review. Grouping students, he developed a competition between teams. “They seemed to enjoy the change,” he noted.

**A MURDER MYSTERY GAME FOR UNIQUELY MILITARY CRIMES (CAPT AMY CHARLTON AND CAPT SCOTT BOEHNE, DFL):** Originally developed by Lt Col (ret) Marie Revak for math courses, this game can

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## Mech Madness: A Fun Way to Assess Student Comprehension and Evaluate Homework

Captain Jason Bartolomei, DFEM

**INTRODUCTION:** Are you tired of collecting homework? Are you grading the same problems over and over again, year after year, and still not convinced the students are getting it? If so, you might consider holding a Mech Madness session for your class. Mech Madness is an in-class, 20-minute ladder tournament, where students compete against each other, testing course and homework knowledge for a grade.

Mech Madness is effective for many reasons. Firstly, it is a fun change of pace for the students and faculty. Secondly, students are forced to work cooperatively on homework, helping each other understand complicated material. Thirdly, the competitive nature of the game entices more students to complete the homework assignments, better preparing them for the more heavily-weighted graded events.

This article provides instructors who are looking for innovative teaching ideas and methods with a complete description of the Mech Madness gaming format and how to implement similar games in their own disciplines.

**HOW MECH MADNESS WORKS:** The game is set up like a competition ladder used in athletic gaming events. There are six gaming rounds lasting 3:00 minutes. At the end of each round, the winning teams progress to the next table in the ladder and the losing teams retreat. At the end of the competition, the teams at the top table receive the highest marks and the teams at the cascading tables receive marks commensurate with their performance.

**GAME SETUP:** At the beginning of the game, students arbitrarily seat themselves at the game tables. The instructor reveals the order of play by designating the top and bottom table.

The winners advance to the next table up the ladder and the losers retreat. The winner at the top table and the loser of the bottom contest remain at the same table after each round.

**SCORING:** One point is available for each question asked. The answering team gets 1 point for a correct response. The asking team receives points if the opposing team answers a question incorrectly or is unable to answer. Questions are asked until the three minute timer signals round over.

**TIEBREAKERS:** As one can imagine, ties are frequent during these games. The current game policy determines tiebreakers using the age-old “rock, paper, scissors” game of chance. Although it provided for some great classroom laughs, students grew weary of lady luck and requested alternative forms of tiebreaker determination.

**GAME MATERIALS:** Each student was allowed to have a copy of class notes, a copy of their individually completed homework, and a copy of the score card.

**SCORE CARDS:** Score cards were used by each team. A customized score card was designed to provide a common template for the questions, the scoring for the individual and team, as well as the final team score.

Students were required to bring several questions to gaming periods from their homework assignments and class notes, prepared on the score card. Students who did not complete the score cards prior to the beginning of class were penalized at the instructor’s discretion. In some cases, unprepared students were not allowed to participate and received a zero for the assignment. At the end of round 6 the score cards were collected and grades were assigned.

**ACCEPTABLE QUESTIONS:** The students were given specific instructions on acceptable questions. Questions were derived for assigned homework problem sets. For each Mech Madness session, students were able to create questions from 10 to 12 common homework problems. For each problem set, students were directed to design questions from an individual problem’s find, given, free-body diagram, essential intermediate steps, and final answers. Solution sets were available for the students to check their homework and ensure they had correct answers for their prepared questions. Solutions for individual problems were provided only if students had made a significant attempt or solved the problem. In addition, the students were also able to ask questions from the lecture notes.

**UNACCEPTABLE QUESTIONS:** Unacceptable questions were often asked during the games. In most cases, students had prepared questions for which they had an incorrect solution or no solution. Also, students asked insignificant questions which were not essential to the solution of the problem. If an opposing team felt they were asked an unacceptable question, they were able to appeal to the instructor. If the question was deemed unacceptable, the accusing team was awarded two points. Conversely, if the question was acceptable, the asking team received two points. The accusing team won most appeals.

**OTHER RULES:** Due to the parity which evolved during the course of several competitions, special incentives were put in place for well prepared teams who started at the bottom of the ladder. The incentive stated that at the end of each game, teams that were able to climb the ladder would receive a + for each table forward they had moved. For example, if a team had started

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*Case Study Method, cont'd from page 1*

Even if I thought a case would take a single class period, I now know from experience to allocate two lessons to the case.

The limitations of the 50-minute class led to what I call the “hot wash” in this second lesson. Here, I try to have cadets wrap up their discussion and commit to a single group solution, which is not always easy. I attempt to summarize the students’ discussion and their solution, as well as to put questions to them about the feasibility of their solution. Because they have “solved” real world problems, real world limitations to their solutions will surface. Although the process of reaching the solution is critical, even more critical, in my view, is going through the process they used in reaching that solution. During this debrief, the cadets discover where they made good choices based on hard data and exercised good problem solving skills, and also where they simply succumbed to emotionalism.

The second challenge is that cadets sometimes come to class unprepared to discuss the case. This is hardly a new problem at USAFA, but with the case study method, there is no “switch to lecture mode” option for the instructor to fall back on. The best solution I have found is to require advance preparation with grading accountability. I assign cadets to play the roles of the various interested parties in the case and to submit a one-page paper summarizing their perceptions of the role prior to the case discussion. This assignment forces students to review the material in sufficient detail to be able to articulate their stances on the issue, preparation that pays enormous dividends during the discussion.

**HOW CAN YOU USE CASES?** You can find prepared cases for use in your class from many sources. The Electronic Hallway’s website (<http://www.hallway.org>) is one; Harvard’s Kennedy School of Government (<http://ksgcase.harvard.edu>) is another, as is the Harvard Business School (<http://harvardbusinessonline.hbsp.harvard.edu>). If you are unable to find a suitable case from one of these sites, you can find the makings of your own case in newspapers everyday. You simply focus on an issue within your discipline that poses no obviously right answer, identify a decision maker who must solve this problem, as well as other interested parties with a stake in the decision, and then gather as much information, from as many different viewpoints, as you can find. I give students different documents and information depending on the role they will play, a practice that mirrors reality in that no one person in “real life” has complete information.

Over the past two years, my classes have used cases that DFL has built based upon the B-52 crash at Fairchild AFB, the shoot down of the two Black Hawk helicopters by F-15 fighter planes in Northern Iraq, military tribunals for suspected al-Qaeda terrorists, the United Airlines bankruptcy, the My Lai incident, and a *U.S. News and World Report* cover story on the deficiencies of the military justice system. We are currently working on a case built around the Tarnak Farms friendly fire incident near Kandahar, Afghanistan.

**CONCLUSION:** Using teaching cases can be frightening in that this approach takes us out of our normal comfort zone as leaders and transforms us into advisors or facilitators. But if you can successfully make the transition, you will find your classes more stimulating, your cadets better problem-solvers, and yourself talking about “what a great class you just had.”

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*Traits, cont'd from page 4*

◆Fourth, one of the most precious gifts you can provide as instructor is to exude an affirming influence, a healing energy, a joy of life. As Marsha Sinetar points out in *The Mentoring Spirit*, we must strive mightily to become "artists of encouragement."

◆Fifth, and finally, outstanding teachers know that genuine learning almost always involves partnership, a collaboration between student and instructor synergistic in its potential for transformative and constructive change; a change that in its power and mystery rivals the magical transmogrifications of even the mythical Merlin.

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[Note: Reprinted with permission from *The Beacon, A Guide to Faculty Development at St. Norbert College*, September 2002, pages 1-4.]

at table 6, and finished the game at table 4, they would receive a  $\sqrt{+}$  for a final score. There was no penalty for moving backwards. The students liked this arrangement. If they were prepared, most students were able to better their position.

**BENEFITS OF MECH MADNESS:** The game itself was meant to be a motivating factor for cadets to complete the homework assignments. Previous instructors had demonstrated a strong correlation between test performance and homework completion. Therefore, Mech Madness was designed to be a fun alternative to the traditional collection of homework. Student collaboration on completing the homework assignments in preparation for the competitions was encouraged. Some students indicated that the process of thinking of good questions helped their preparation for graded events such as quizzes and exams. They felt that Mech Madness forced them to view the material with the mind of an instructor, in that they were required to understand and ask questions, rather than simply solve problems.

The competitive aspect also motivated several of the students to complete the homework who might not have. Several comments on an end-of-class survey indicated that the competitive nature of the game and the fact that another individual was depending on their performance were motivating factors in completing the homework. Unfortunately, the teaming aspect was also an issue of contempt for other students. Several students felt that they had received grades they did not deserve because of the lack of preparation of their partner. This issue soured many students who would have much preferred an individual competition.

The instructor also greatly benefited from the gaming format. The score card provided vital information on individual cadets. Cadets who came unprepared scored very few points; this was evidenced by a low box score. As a result, it was abundantly obvious which students were not completing the homework. On traditional homework assignment hand-ins it is often very difficult to determine how much of the work is individual effort. The Mech Madness score card is very telling, because two-thirds of the problems are individual effort problems.

Finally, the gaming format lightens the workload of an individual instructor who is teaching 104 students with no assistance. After a 20-minute session, the instructor can quickly determine homework performance without the cumbersome task of grading homework assignments.

**CONCLUSION:** Mech Madness provides a fun alternative to traditional homework collection. Future research and assessment will be performed to quantify the overall benefits.

[Note: An earlier version of this paper was delivered at the 2002 American Society for Engineering Education Annual Conference & Exposition]

be easily adapted to virtually any discipline. Similar to the board game CLUE, but without requiring a board, students complete three worksheets enabling them to determine the location of a murder, the murder weapon, and the individual committing the murder. To add interest, instructors can post photos of possible murderers with clever names such as 2Lt Will Wiggy, Capt Chip Chocolate, or Capt Charlene Chatterbox. Alternatively, instructors can use actual photos of cadets in their classes. Students, working either individually or in pairs or teams, who complete all three worksheets will be able to solve the murder mystery. Modest prizes, such as candy bars, add interest.

The questions on the worksheets require a range of thinking skills. For example, the sheet providing the answer to the weapon involves a matching activity where the letters associated with the answers spell out the murder weapon. The sheet providing clues to the location requires cadets to determine whether the event described in a mini-case study is lawful or unlawful with a full explanation for the choice. A typical case study is: "At Osan AFB, the murderer's commander ordered him/her to "run to the BX and get me a box of cigars." Lawful/ Unlawful Why?" Similarly, the murderer page offers case studies requiring cadets to figure out whether a crime has been committed or not. A typical case might be: "Lt Slim Shady got into an argument with his boss over the recently released NCAA tournament seedings. Lt Shady decided that he just couldn't work for a Duke fan and left early intending never to go back. However, after a slushy at the local 7-11, he cooled off and went back to work. No one ever knew he was even gone." Virtually all the questions, but the mini-case studies in particular, encourage cadets to wrestle with difficult issues and often to work collaboratively.

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